

REMARKS/ARGUMENTS

Favorable consideration of this application, as presently amended and in light of the following discussion, is respectfully requested.

Claims 1-4 and 7 are presently pending in this application, Claims 5 and 6 having been canceled, Claims 1-4 having been amended and Claim 7 having been newly added by the present amendment.

In the outstanding Office Action, Claims 4-6 were objected to for being in improper form; Claims 1 and 2 were rejected under 35 U.S.C. §103(a) as being unpatentable over Ichikawa et al. (U.S. Patent 5,595,581) in view of Ohno et al. (U.S. Patent 6,669,751); and Claim 3 was rejected under 35 U.S.C. §103(a) as being unpatentable over Ichikawa et al. in view of Ohno et al., and further in view of Nishimura et al. (U.S. Patent 6,887,826).

Regarding the objection to Claims 4-6, Claim 4 has been amended to remove the noted informality, and Claims 5 and 6 have been canceled.

Claims 1-4 have been amended and Claim 7 has been newly added herein. These amendments and addition in the claims are believed to find support in the specification, claims and drawings as originally filed, and no new matter is believed to be added thereby. If, however, the Examiner disagrees, the Examiner is invited to telephone the undersigned who will be happy to work in a joint effort to derive mutually satisfactory claim language.

Before addressing the rejections based on the cited references, a brief review of Claim 1 as currently amended is believed to be helpful. Claim 1 is directed to a honeycomb filter for purifying exhaust gases and recites “a columnar body comprising a plurality of porous ceramic members, each of said porous ceramic members having a plurality of through holes extending in parallel with one another in a length direction of said columnar body and a wall portion interposed between said through holes, said wall portion being configured to collect particles in exhaust gases; and a plurality of plugs filling ones of said through holes at one

end of said columnar body and other ones of said through holes at the other end of said columnar body, wherein said columnar body has a porosity which is in a range from 20 to 80%, said plugs have a porosity which is 90% or less, and said porosity of said plugs is set to 0.15 to 4.0 times of said porosity of said columnar body.”

By providing such a columnar body, a thermal stress exerted during use is dispersed among the porous ceramic members, and furthermore, the difference between the thermal expansion coefficients of the columnar body and the plugs is set smaller, making less susceptible to gap formation between the columnar body and the plugs. As a result, the columnar body is significantly less susceptible to cracking caused by the thermal expansion and thermal stress due to the repetitions of a high temperature regeneration process during which the particles collected on the wall portion are burned by a heated gas.

It is respectfully submitted that Ichikawa et al., Ohno et al. and Nishimura et al. do not teach or suggest “a columnar body comprising a plurality of porous ceramic members ..., wherein said columnar body has a porosity which is in a range from 20 to 80%, said plugs have a porosity which is 90% or less, and said porosity of said plugs is set to 0.15 to 4.0 times of said porosity of said columnar body” as recited in amended Claim 1.

As seen from Figures 1A and 1B of Ichikawa et al., the Ichikawa et al. apparatus regenerates by a blow-back process in which the particles collected in the partition wall are removed by passing a blow-back air through the gas flow passages in the opposite direction. Thus, Ichikawa et al. simply proposes that the second sealing members 22 plugging the gas flow passages at the downstream end have porosity which allows the blow-back air to easily pass through without increasing pressure loss, thereby releasing the deposited particles efficiently.¹ On the other hand, Ohno et al. simply describes the porosity of its filter in order

¹ See Ichikawa et al., column 1, line 64, to column 2, line 3, and column 4, lines 33-54.

to improve the flow of exhaust gas and reduce the pressure loss caused by its use.² Finally, Nishimura et al. is cited for “a catalyst ... supported thereon,” and is not believed to teach or suggest that “said columnar body has a porosity which is in a range from 20 to 80%, said plugs have a porosity which is 90% or less, and said porosity of said plugs is set to 0.15 to 4.0 times of said porosity of said columnar body” as recited in amended Claim 1. Therefore, the structure recited in amended Claim 1 is believed to be clearly distinguishable from Ichikawa et al., Ohno et al., and Nishimura et al.

Because none of Ichikawa et al., Ohno et al., and Nishimura et al. discloses the structure as recited in Claim 1, their teachings even combined are not believed to render the filter recited in Claim 1 obvious.

For the foregoing reasons, Claim 1 is believed to be allowable. Furthermore, since Claims 2-4 and 7 depend directly or indirectly from Claim 1, substantially the same arguments set forth above also apply to these dependent claims. Hence, Claims 2-4 and 7 are believed to be allowable as well.

² See Ohno et al., column 2, lines 40-45, column 6, lines 1-4, and column 24, lines 50-54.

In view of the amendments and discussions presented above, Applicant respectfully submits that the present application is in condition for allowance, and an early action favorable to that effect is earnestly solicited.

Respectfully submitted,

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